WHAT IS CLAIMED IS:

1. ~~A method for~~ pulse width modulation comprising the steps of:

providing a pulse width modulator having n bits of resolution and a nominal time period P_n;

supplying an additional timer to generate K associated states and having a timer period P_T;

associating a modulator output value with each one of said K states; and

establishing a pulse width modulation update interval of $K*P_T$.

2. The method of claim 1 wherein P_T is an integer multiple of P_n.

3. The method of claim 1 wherein said pulse width modulator includes an overflow bit.

4. ~~The method of claim 1 wherein $P_T = P_n$.~~

5. A method for improving the resolution of an n bit pulse width modulator having a nominal time period of P_n, the method comprising the steps of:

supplying an additional timer having K associated states and a timer period of P_T;

associating a modulator output value with each one of said K states; and

outputting a pulse according to said modulator output value during each time period P_n occurring within said timer period P_T during each one of said K timer states, whereby the resolution of said n bit pulse width modulator substantially equals $n = \log_2(K)$.

6. The method of claim 5 wherein P_T is an integer multiple of P_n.

7. The method of claim 5 wherein said pulse width modulator includes an overflow bit.

8. The method of claim 5 wherein $P_T = P_n$.

9. The method of claim 5 where P_T is other than an integer multiple of P_n and $P_T >> P_n$.

10. The method of claim 9 wherein said pulse width modulator includes an overflow bit.

11. A computer program product for pulse width modulation comprising:

a computer readable storage medium having computer readable program code means embedded in said medium, said computer readable program code means having:

a first computer instruction means for associating K timer states with a timer having a period P_T; and

a second computer instruction means for reading a commanded pulse width modulation duty cycle;

a third computer instruction means for assigning an n bit modulator output value with each one of said K states according to said duty cycle.

12. The computer program product of claim 11 wherein said third computer instruction means updates said n bit modulator output value assigned to each state at time intervals of $K*P_T$.

13. A method for controlling the brightness of a display using pulse width modulation comprising the steps of:

receiving a commanded brightness level;

using an n bit pulse width modulator to assert a plurality of pulses in accordance with an output of said n bit pulse modulator wherein said modulator has a period P_n;

assigning a modulator output value to each one of K states of a K state timer wherein said timer has a period P_T;

outputting said plurality of pulses according to said modulator output value during each P_n period occurring within timer period P_T; and

supplying power to the display in accordance with said plurality of pulses.

14. An apparatus for pulse width modulation comprising:

an n bit pulse width modulator having a nominal modulator period P_n;

a timer to generate K timer states and having a timer period P_T;

a computing device for assigning a modulator output value to each of said K states; and

whereby said modulator outputs a plurality of pulses according to said modulator output value during each P_n period occurring within timer period P_T and whereby said pulse width modulator has a resolution of $n+\log_2 K$.

15. The apparatus of claim 14 wherein said timer is included within said computing device.

16. The apparatus of claims 14 where P_T is an integer multiple of P_n.

17. The apparatus of claim 14 wherein P_T is other than an integer multiple of P_n and $P_T >> P_n$.

18. The apparatus of claim 14 wherein said modulator further comprises overflow bit.

19. An apparatus improving the resolution of an n bit pulse width modulator having a P_n period, the apparatus comprising:

a timer to generate K timer states and having a timer period P_T;

a computing device for assigning a modulator output value to each of said K states; and

whereby said modulator outputs a plurality of pulses according to a modulator output value during each P_n period occurring within timer period P_T and whereby the pulse width modulator has a resolution of $n+\log_2 K$.

20. An LED backlit display comprising:

an array of LEDs;

an n bit pulse width modulator having a period of P_n;

a computing device for assigning a modulator output value to each of said K states;

whereby said modulator outputs a plurality of pulses according to said modulator output value during each P_n period occurring within timer period P_T and whereby said pulse width modulator has a resolution of $n + \log_2 K$.; and

a driver for supplying power to said array in accordance with said modulator output.